

Docket: 71626US02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SHELTON, Michael C.

Serial No.: 10/796,176

Group Art Unit: 1796

Filed: March 9, 2004

Examiner: HAIDER, Saira B.

For: LOW MOLECULAR WEIGHT CELLULOSE MIXED ESTERS AND THEIR
USE AS LOW VISCOSITY BINDERS AND MODIFIERS IN COATING
COMPOSITIONS

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. 1.132

I, Michael C. Shelton, am an inventor of the above application. This declaration is being submitted to traverse the rejections of the Office Action dated September 29, 2008, over U.S. Patent No. 5,292,783 to Buchanan ("Buchanan"). I graduated from the University of Tennessee, Knoxville, with a Bachelor of Science in Chemistry, and received a Ph.D. in Chemistry from Duke University. Thereafter, I was a Postdoctoral Associate at The Scripps Research Institute in La Jolla, California. I have been working for Eastman Chemical Company for the last 10 years, most recently as a Principal Research Chemist. During my entire employment at Eastman, I have principally been involved in the field of cellulose ester chemistry, primarily focusing on synthesis of cellulose esters and their use in various applications. Additionally, I have been the project leader for numerous new product growth projects and process improvement projects. I have been an author or co-author of several publications in the field of cellulose ester chemistry. Furthermore, I have been the lead inventor on multiple U.S. Patent Applications in the field of cellulose ester chemistry.

This declaration provides test data establishing that a mixed cellulose ester having an inherent viscosity ("IV") of about 0.2 dL/g has substantially different properties

than a mixed cellulose ester having an IV of 0.12 dL/g or less. To show this, we prepared two cellulose mixed ester samples with respective IVs of 0.12 and 0.18 dL/g. These samples had similar butyryl and acetyl content as three of the samples originally prepared in Example 34 of the Specification. These samples were then tested in the same manner employed in Example 34. Specifically, the samples were dissolved in a solvent of 90/10 n-butyl acetate/xylene at 50 weight percent solids. Thereafter, the Brookfield viscosity of each solution was measured. The following table presents data obtained from three samples described in Example 34 and Table 6A of the Specification, along with the two similar samples prepared under my direction for the purposes of this declaration.

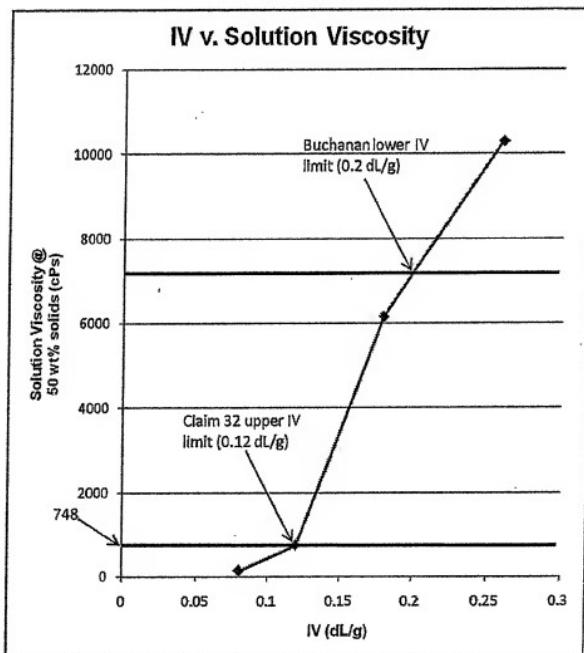
Table 1

Sample Number	Source	Butyryl DS	Acetyl DS	IV (dL/g)	Solution Viscosity @ 50% solids (cPs)
HS-CAB-55 EMT02-117	Table 6A	2.77*	0.19*	0.08	139.4
HS-CAB-55 EMT02-128	Table 6A	2.78*	0.18*	0.08	132.4
HS-CAB-55 EMT02-107	New	2.66	0.18	0.12	748
HS-CAB-55 EMT02-118	New	2.43	0.21	0.18	6,150
CAB-551-0.01	Table 6A	2.81*	0.09*	0.26	10,300

*Calculated from original data; not presented in Table 6A

As can be seen from the results listed in Table 1, the solution viscosities increase dramatically with only minor increases in the cellulose esters' IVs. To better illustrate this phenomenon, the following graph of the data listed in Table 1 has been provided to visually depict the effect of the variance in IV by comparing the Brookfield viscosities of each of the solutions:

Graph 1

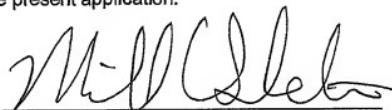


As is clear from Graph 1, the solution viscosity of a cellulose ester solution at 50 weight percent solids greatly increases with only minor increases in cellulose ester IV. Maintaining a lower solution viscosity at higher solids content is important because it enables coating formulations to be prepared with a greater amount of solids and lower volatile organic compound content while maintaining workability. Cellulose ester compositions yielding higher solution viscosities, such as those that result from a high solids content solution using a cellulose ester with an IV of about 0.2 dL/g, are not suited for use in coating formulations because their high viscosities render them unworkable. However, cellulose esters having an IV of 0.12 dL/g or less are suited for

use in high solid coating formulations because they provide a low viscosity, workable composition. Thus, cellulose esters having an IV of 0.12 dL/g or less do indeed possess substantially different properties than cellulose esters having an IV of about 0.2 dL/g.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of any patent issuing from the present application.

Date: 2/18/09



Michael C. Shelton